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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,426	03/24/2006	Juan Fernando Martin Antolin	OF1001	2010

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EXAMINER

LEE, BENNY T

ART UNIT	PAPER NUMBER
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2817

MAIL DATE	DELIVERY MODE
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09/21/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/573,426

Applicant(s)

MARTIN ANTOLIN ET AL.

Examiner

Benny Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

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35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are: At all occurrences throughout the specification, note that "said" should be rewritten as --the-- for clarity of description (e.g. p 1, ls 16, 21; p 2, l. 13; p 4, l. 24; p 5, l. 5; p 9, l. 29; p 10, l. 5; p 11, ls 5, 13). Page 1, line 17, note that "neighbourhood" should be spelled as --neighborhood--. Page 3, line 1, note that "utilisation" should be spelled --utilization--. Page 4, line 14, note that "said" should be rewritten as --these-- for clarity of description; line 25, note that "else" should be rewritten as --alternatively-- for an appropriate characterization. Page 7, line 19, note that "polarisation" should be spelled --polarization--. Page 9, line 20, note that "the" should be deleted for grammatical clarity. Page 10, line 29, note that "behaviour" should be spelled as --behavior--.

The disclosure is objected to because of the following informalities: Page 1, line 15, note that it is unclear what characterizes "focalisation". Clarification is needed. Page 2, lines 11, 12, note that the recitation "we might cite those based on ..." is vague in meaning and needs clarification. Page 5, line 15, note that reference to "the last topology" is vague in meaning and needs clarification. Page 8, line 9, note that reference to "the mass planes" is vague in meaning and needs clarification. Page 9, lines 18, 19 & page 11, lines 15, 22, note that reference to "the pass band 13", with respect to the Figures 1 & 3 descriptions respectively, is vague in meaning and needs clarification. Page 9, lines 24, 27 & page 10, lines 6, 10, 15, note that reference to "topology 5 (a-f)" is vague in meaning and needs clarification. Page 11, lines 5, 14, 15, 17, 19,

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note that reference to “resonators 5a, 5b, 5c, 5d and 5e” is vague in meaning with respect to the description of “Figure 3”. Clarification is needed. Page 12, lines 13-17, note that a detail explanation of what is depicted in the graph of “Figure 5” is required for clarity of description. Appropriate correction is required.

The drawings are objected to because of the following: In Fig. 2, at drawings b)-f), note that reference labels --7-- & --8-- needs to be provided for each of the drawing figures, such as to be commensurate with the specification description of “Fig. 2”.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the split ring resonators mounted in series with the conducting strip (i.e. cl 5), the split ring resonators being etched in the ground plane (i.e. cls 7, 11), the split ring resonators having a capacitive gap (i.e. cl 8), the plurality of metallic elements etched into one or more levels of metal (i.e. cl 12), the microelectromechanical switches (i.e. cl 14) and the antenna (i.e. cl 15), respectively must be shown or these feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the

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renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required. The specification needs to provide a respective description for the corresponding claimed subject matter: the split ring resonators mounted in series with the conducting strip as recited claim 5; the bandwidth control as recited in claim 13; the MEMS configuration as recited in claim 14; the antenna as recited in claim 15.

Claims 4, 5, 9, 10, 14, 15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

With respect to claims 4, 5, 9, 10, the specification fails to provide an adequate written description to enable one skilled in the art to be able to use the claimed configuration as either "behaving" as a "band rejection filter" or a "band pass filter". In other words, it would be unclear how the recited configuration would result in (or behave as) the respectively recited filtering characteristics, such that one skilled in the art would be unable to effect it's use as the intended type of filter response.

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With respect to claims 14, 15, the specification fails to provide an adequate written description to enable one skilled in the art to respectively make the MEMS configuration (i.e. claim 14) and the “antenna” (i.e. claim 15) in the manner intended by applicant.

Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1, 13, 14, note that it is unclear what respective feature is intended by the corresponding recitation “it”. Clarification is needed.

In claim 6, note that the presence of the parenthetical phrase renders the claim vague and indefinite as to whether the limitations within the parenthesis further limit the generically recited “conventional transmission line”. Clarification is needed. Also, note that it is unclear what scope of coverage is intended by the recitation “variants thereof”. Clarification is needed.

In claim 7, 11, 13, note that it is unclear how the recitation of “split ring resonators” herein relates to the earlier recitation of “split ring resonators” (i.e. claim 1), from which this claim directly depends (i.e. same as, different from, etc). Clarification is needed. Note that reference to “their surface” is vague in meaning (i.e. “surface” of what?). Clarification is needed.

In claim 11, note that it is unclear which ones of the “split ring resonators” is intended by the recitation of “said metallic split ring resonators”. Clarification is needed.

In claim 12, note that “said open rings” lacks strict antecedent basis. Moreover, note that “one or more levels of metal” is vague in meaning since no such structure has been previously defined.

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In claim 13, note that reference to "... and/or their geometry" is vague in meaning since no such "geometry" has been previously defined. Clarification is needed.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 5, 6, 12, 13 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Tsuzuki.

Tsuzuki discloses in general a filter for microwave/millimeter waves (e.g. 100 in Fig. 1) comprising: a dielectric substrate (110) having a plurality of series coupled circular shape "split ring resonators" (i.e. 11-21) disposed on the substrate and the resonators (11, 21) are electrically connected to respective conductor strips (i.e. at input/output terminals 22, 23) in a microstrip configuration. As described at column 3, line 55, the dielectric substrate includes a ground plate (i.e. ground plane). It should be noted that the resonators would have been considered "split ring" resonators in view of the gap in the ring, which "splits" the resonator. Note that in an alternative input/output coupling configuration depicted in Fig. 2, the general split ring resonator can be inductively (i.e. magnetically) coupled to the input/output conductor. It should be noted that by virtue of the serially coupled resonator configuration, a band pass filter is realized, as would have been known to those of ordinary skill in the art. Furthermore, it should be noted that in Tsuzuki,

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it is desirable to orient the gaps of the split ring resonators in a manner as to control the degree of coupling between adjacent resonators (e.g. see abstract).

Claims 1, 5, 6, 12 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Kim et al.

Kim et al discloses in Fig. 3A, a microwave/millimeter wave filter comprising a dielectric substrate (220) with ground plane (230). Note that a plurality of square (i.e. polyhedral shape) "split ring resonators" (i.e. 310 to 360). Note that the resonators are considered "split ring" by virtue of the square ring shape and the gap provided in the square ring. Note that the resonators are disposed on the substrate in a "microstrip" configuration and arranged in series as to provide a band pass response, such as would have been known to those of ordinary skill in the art. Moreover, note that resonators (310, 340) are electrically connected to input/output conductors.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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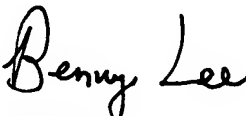
Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuzuki or Kim et al taken in combination with Smith et al.

Smith et al discloses a planar arrangement of split ring resonators. Smith discloses among a variety of possible uses of the split ring resonators include microwave filters and antenna applications.

Accordingly, in view of the exemplary teaching of split ring resonators provided by Smith et al, it would have been obvious to have realized the split ring resonators in either Tsuzuki or Kim et al as, for example, an antenna surface, such as exemplarily taught by Smith et al. Such a modification would have been considered obvious in view of the recognition in Smith et al that split ring resonators have uses ranging from filters (like those in Tsuzuki or Kim et al) to antennas, thereby suggesting that the analagous split ring resonators of Tsuzuki or Kim et al would have been capable of use as an antenna, thereby suggesting the obviousness of such a realization.

Any inquiry concerning this communication should be directed to Benny Lee at telephone number 571 272 1764.

B. Lee


BENNY T. LEE
PRIMARY EXAMINER
ART UNIT 2817